



## General Studies-3; Topic: Infrastructure: Energy

### India's Compressed Biogas Sector

#### Introduction

- A recent report by the Ministry of Petroleum and Natural Gas (MoP&NG) emphasised the need for India's energy transition.

#### Low Carbon Transition of India's Oil and Gas Sector

- Climate change poses a significant disruption to the oil and gas sector.
- **India needs to capitalise on emerging opportunities and align with the net zero emission goals.**
- India has a natural gas deficit of 47 per cent of the total consumption, and is met through imports.
- Compressed biogas (CBG) can help plug this gap.

#### Compressed biogas (CBG)

- Compressed biogas (CBG) has emerged as a viable alternative to imported fossil natural gas.
- Currently, most CBG production occurs in European and North American markets.
- In countries like Denmark and Sweden, bio-methane constitutes over 10 per cent of their total gas sales.
- However, only 46 CBG plants have been commissioned in India as of March 2023.

#### Government Initiatives

- Government plans to operationalise 5,000 plants by the end of 2023 under the **Sustainable Alternative Towards Affordable Transportation (SATAT) scheme.**

- 4,090 letters of intent have been issued to various stakeholders.
- The Union government has set a goal to increase the proportion of gas in the energy mix to 15 per cent by 2030.
- CBG can play a crucial role in achieving this objective.
- In 2015, the Ministry of Road Transport and Highways authorised the use of CBG as a viable alternative to CNG for motor vehicles.
- Biomass aggregation and storage equipment are eligible for a subsidy of up to 50 per cent under the **Sub-Mission on Agricultural Mechanization (SMAM) scheme**.

## Concerns / Challenges

- One of the primary challenges in establishing CBG plants is the **lack of a reliable and consistent supply of feedstock**.
- **High capital investment** is also stopping small investors from entering the CBG scene.
- **Lack of sector experts** at the ground level.
- The **number of CNG stations in India is still low**, which makes it difficult to sell CBG for vehicular use.

## Way Forward

- India should target a 10 per cent blend of CBG in natural gas by 2030.
- To incentivise the sector, the transportation of CBG through pipelines should be exempted from charges for a period of 10 years.
- The demand for CBG is mainly in urban regions. The introduction of CBG-powered tractors and other agricultural equipment can address this concern.
- For the consistent supply of feedstock, Ministry of Agriculture should take responsibility for biomass management, supported by state-level policies.
- Sugar mills can play a significant role in ensuring a sustainable pricing mechanism for feedstock in press mud-based CBG plants.
- **Improved access to credit, long-term land leases and tax holidays can attract private investment to the CBG sector.**
- Implementing a **Production Linked Incentive scheme** specifically targeting the CBG sector.
- India should focus on establishing a coordinated institutional framework to facilitate **research and development (R&D) in the CBG sector**.
- Introducing courses on CBG technology, feedstock management, marketing, and operations in state universities and agricultural institutes.